

REMARKS

Applicants concurrently file herewith an Excess Claim Fee Payment Letter for one (1) excess independent claim.

Claims 1 and 3-18 are all of the claims presently pending in the application. Claims 1 and 3 have been amended to more particularly define the invention. Claim 2 has been canceled without prejudice or disclaimer. Claims 4-18 have been added to claim additional features of the invention and to provide more varied protection for the claimed invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1-2 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hedberg et al. (WO 99/53625A1) (provided by Applicant in the April 20, 2004 Information Disclosure Statement) (hereinafter "Hedberg"). Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hedberg in view of Shoji (U.S. Patent No. 5,978,421) (provided by Applicant in the April 20, 2004 Information Disclosure Statement).

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention (e.g., as defined by claim 1) is directed to a base-station amplifier device for use in amplifying at least one channel to be transmitted from a base station. The base-station amplifier device includes at least one amplitude limiting means, a high frequency modulating means, an adding means for adding outputs from the high frequency modulating means, and an amplitude controlling means. The amplitude controlling means instructs the amplitude limiting means not to perform an amplitude limitation when the number of the at least one channel is small.

Conventionally, it is necessary to linearly amplify increased peak powers in a base station by using an amplifier. However, if the amplifier in the base station is less than 200 watts, it is impossible to perform a linear amplification so that a distortion is generated with

deterioration of radio characteristics. In the CDMA mode, since transmitting power is increased by increasing the number of channels to be multiplexed, peak power increases as traffic increases. Therefore, there is a tendency to largely vary a design of the amplifier in response to the magnitude of the peak signal to be input into the amplifier.

The claimed invention of exemplary claim 1, on the other hand, provides a base-station amplifier device having at least one amplitude limiting means and an amplitude controlling means. The amplitude controlling means instructs the amplitude limiting means not to perform an amplitude limitation when the number of the at least one channel is small (see page 7, lines 4-13). This combination of features provides superior effects. That is, it is possible to amplify high peak signals during low traffic (when the number of channels is small) and it is possible to achieve a lower power consumption (see page 3, lines 5-9 and page 10, lines 1-3).

II. THE PRIOR ART REFERENCES

A. The Hedberg Reference

The Examiner alleges that Hedberg teaches the claimed invention of claims 1 and 2. Applicants respectfully submit, however, that there are elements of the claimed invention which are neither taught nor suggested by Hedberg.

That is, Hedberg does not teach or suggest a base-station amplifier device “*wherein said amplitude controlling means instructs said amplitude limiting means not to perform an amplitude limitation when the number of said at least one channel is small*” as recited in claim 1.

The Examiner attempts to rely on Figure 2 and page 7, line 21 through page 9, line 17 of Hedberg to support his allegations. The Examiner, however, is clearly incorrect.

That is, nowhere in this passage or this figure (nor anywhere else for that matter) does Hedberg teach or suggest a base-station amplifier device wherein an amplitude controlling means instructs an amplitude limiting means not to perform an amplitude limitation when the number of the at least one channel is small. In fact, the Examiner does not even allege that Hedberg teaches this feature. Indeed, the Examiner merely relies upon Hedberg as allegedly teaching an amplitude limitation in a CDMA system having an amplitude controlling means

for controlling the amplitude limiting means based on characteristics of the amplifying means.

Indeed, Hedberg merely teaches an amplitude limitation, application specified integrated circuit(ASIC) (250). The ASIC (250) is a high speed hardware device that is capable of limiting the amplitude of the composite in-phase and quadrature signals before they are forwarded to the pulse shaping filters (120a) and (120b) (see page 7, line 28 through page 8, line 3).

The claimed invention of exemplary claim 1, on the other hand, provides a base-station amplifier device having at least one amplitude limiting circuit and an amplitude controlling circuit, wherein the amplitude controlling means instructs the amplitude limiting means not to perform an amplitude limitation when the number of the at least one channel is small. This combination of features provides superior effects. That is, it is possible to amplify high peak signals during low traffic (when the number of channels is small) and it is possible to achieve a lower power consumption (see page 3, lines 5-9 and page 10, lines 1-3).

Hedberg does not teach or suggest an amplitude controlling means that instructs at least one amplitude limiting means, let alone teach or suggest that the amplitude controlling means instructs the amplitude limiting means not to perform an amplitude limitation when the number of the at least one channel is small.

Furthermore, nowhere does Hedberg teach or suggest wherein said amplitude controlling means controls said amplitude limiting means only when a number of said at least one channel exceeds a preset number. In the Office Action (see Office Action page 3) the Examiner, in the rejection of claim 2, alleges that Hedberg teaches this feature. The Examiner attempts to rely on page 9, lines 1-17 and page 10, lines 6-20 of Hedberg to support his allegations. The Examiner, however, is clearly incorrect.

These passages of Hedberg merely disclose a scaling factor "s" that is used to limit the instantaneous amplitudes associated with the composite in-phase and the composite quadrature signals. The scaling factor is based on maximum amplitudes a_1 and a_2 , and not a preset number of channels. Hedberg does not even mention adjusting an amplitude based on the number of channels, let alone, teach or suggest that said amplitude controlling means controls said amplitude limiting means only when a number of said at least one channel

exceeds a preset number.

Therefore, Applicants submit that there are elements of the claimed invention that are not taught or suggest by Hedberg. Therefore, the Examiner is respectfully requested to withdraw this rejection.

B. The Shoji Reference

The Examiner alleges that Shoji would have been combined with Hedberg to form the claimed invention of claim 3. Applicants submit, however, that even if combined, the combination of references would not teach or suggest each and every element of the claimed invention.

That is, neither Hedberg nor Shoji, nor any combination thereof teaches or suggests a base-station amplifier device “*wherein said amplitude controlling means instructs said amplitude limiting means not to perform an amplitude limitation when the number of said at least one channel is small*” as recited in claim 1.

The Examiner merely attempts to rely on Shoji as allegedly suggesting an envelope control unit having an amplitude setting device arranged on an output side for monitoring an output level of a power amplifier, wherein the power amplifier has a control means for limiting the amplitude level based on characteristics of the amplifying means and the amplitude setting device in order to prevent the envelope from receiving either excessive or insufficient suppression. The Examiner relies on column 5, lines 26-35 of Shoji to support his allegations.

Nowhere, however, in this passage (nor anywhere else for that matter) does Shoji teach or suggest a base-station amplifier device wherein the amplitude controlling means instructs the amplitude limiting means not to perform an amplitude limitation when the number of the at least one channel is small. In fact, the Examiner does not even allege that Shoji teaches this feature.

Therefore, Applicants respectfully submit that theses references, even if combined, would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III. NEW CLAIMS

New claims 4-18 have been added to provide more varied protection for the claimed invention and to claim additional features of the invention. These claims are independently patentable because of the novel features recited therein.

Applicants respectfully submit that new claims 4-18 are patentable over any combination of the applied references at least for analogous reasons to those set forth above with respect to claims 1 and 3.

IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicants submit that claims 1 and 3-18, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Applicants have amended the Figures, as mentioned above, to replace the phrase “amplitude *limiting* circuit” with the phrase “amplitude *controlling* circuit” in reference numeral 106 in each of Figures 1 and 3.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

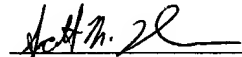
Serial No. 09/964,864
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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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